

# BROADVISION

Q1 (5) 2018

Your personal IPTV/OTT business advisor



## BRAVE NEW AD

WHAT MAKES AN IDEAL ADVERTISEMENT? WHO WATCHES IT AND WHERE? FIND THE PERFECT BALANCE BETWEEN ADVERTISING AND CONTENT IN THE NEW BROADVISION ISSUE.

## REVIEWS AND FORECASTS

### 3 BRAVE NEW AD

Infomir experts talk about the prospects for the growth of the AVOD segment. Find out what kind of advertising you most profitable to broadcast.

## DIALOGS

### 15 READY TO PROTECT YOUR BUSINESS

The inner-workings of customer support. Schemes, quality standards, and invaluable experience. An interview with Anatoly Filatkin, head of the department.

## PROJECTS

### 23 IMPLEMENT AND CONQUER

Three tried-and-tested software development practices that will improve your business.

## TECHNOLOGIES

### 31 WHAT AWAITS OPTICAL NETWORKS

Twenty interesting facts about the evolution of broadband access networks.

## UPCOMING EVENTS



SUBSCRIBE

# BRAVE NEW AD

Infomir experts talk about the prospects for the growth of the AVOD segment. Find out what kind of advertising you most profitable to broadcast

Author: Anna Novikova



**The OTT sphere is developing at an explosive rate. The availability of accessible scalable technologies and the low cost of attracting users have allowed the active market operation, not of only giants like Netflix and YouTube, but also a lot of niche and regional services. Simultaneously, an increasing number of providers are choosing advertising as a source of monetization. According to analysts' projections, this year the advertising model will become dominant in the market, overtaking the subscription one.**

The reason for the high popularity of AVOD services is very simple: there are always viewers who cannot or simply do not want to pay for video content. Ad view in exchange for access to interesting materials is perceived as a natural course of events and the fairest way of interaction.

It is worth noting that this model is not new. It has been used for a long time by television and radio and has become familiar to consumers. But in spite of the fact that the idea of monetisation with the help of ads is not innovative, modern methods of content delivery make it more profitable and convenient.



**The advantages of AVOD over traditional positioning methods (linear TV, radio):**



**The possibility of targeting**

AVOD replaces quantity with quality. Having more accurate data about the audience, an advertiser sets up the ad impression so that only those who will benefit from the promo will see it.



**High ROI indicators**

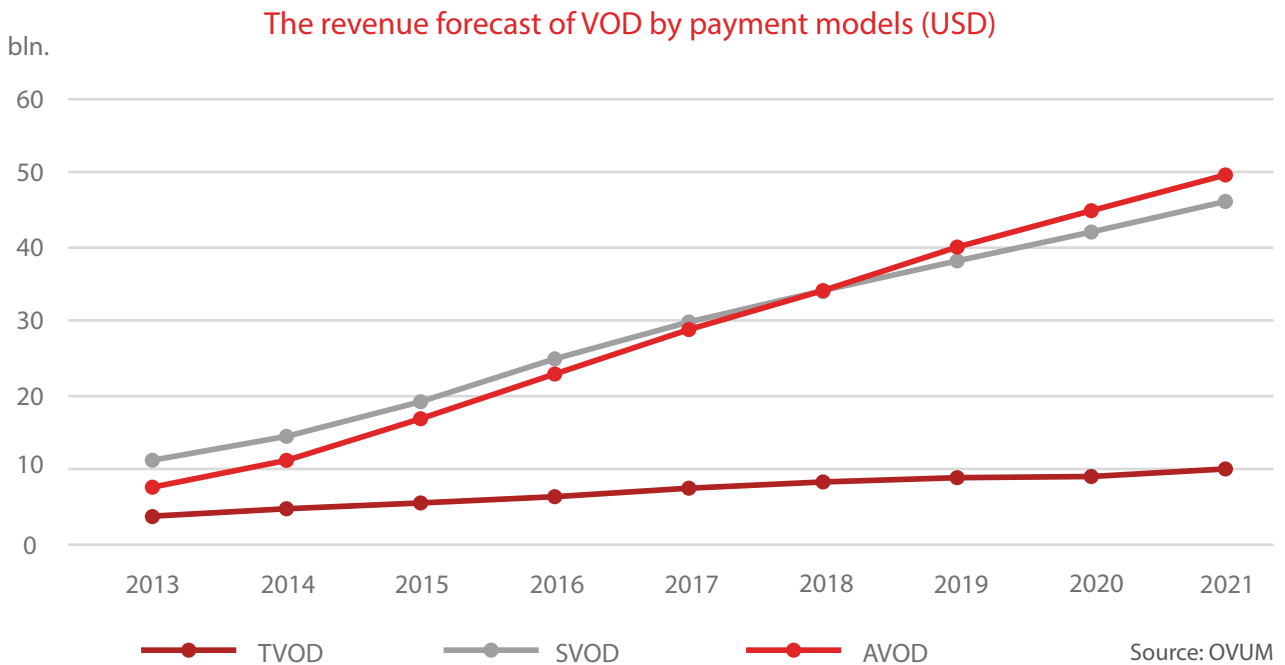
The cost per impression is lower than on linear TV, with efficiency being higher. Therefore, an advertiser receives more target customers for a smaller amount.



**Fast and accurate statistics**

You do not need to wait for the end of the campaign to evaluate its results. You can quickly optimise the media plan and achieve better results.

High demand from both users and advertisers has become a real catalyst for the growth of the AVOD segment. Starting in 2012, just in the USA, the revenues of providers have increased almost fivefold and are projected to continue to grow at an equally rapid pace until 2021.



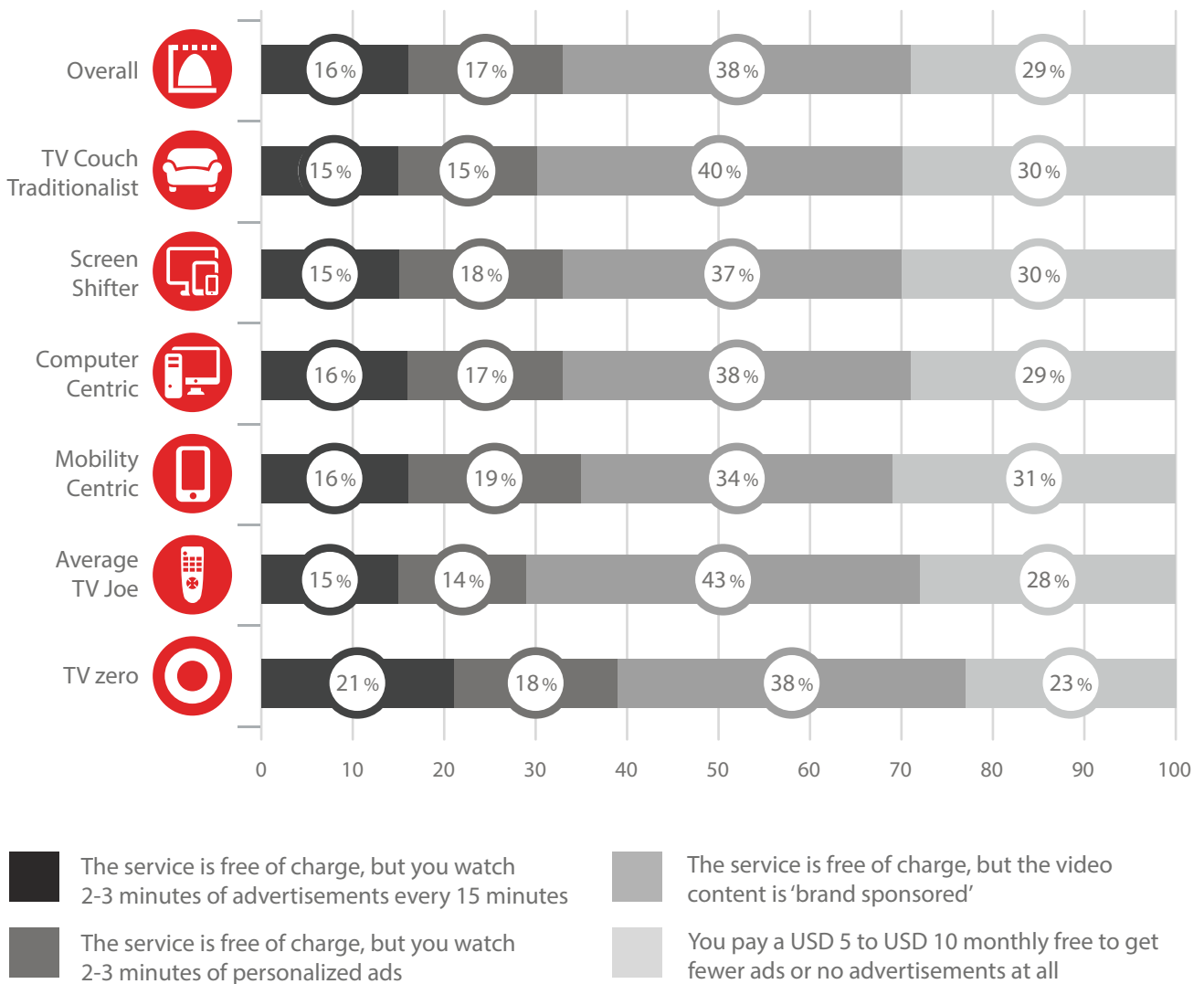
In the article, we will consider the difference between the users' and advertisers' requirements for the development of the AVOD sector. As well as a number of factors on which the success of your business depends.

## THE PERFECT PAYMENT MODEL

Preferences as to how and what advertising to watch vary depending on the group of viewers a user is in. For example, representatives of the Average TV Joe category, those who spend an average amount of time watching TV, would be most positive about sponsorship content. Simultaneously, the fastest growing group of consumers, the Mobility Centrics, would quietly view ads if they are customised and interesting.

Almost a third of all users are willing to pay a modest amount to disable advertisements or reduce their number.

Preferred methods of paying for services



Source: Ericsson ConsumerLab

## THE FOCUS ON EFFICIENCY

Since the main source of AVOD revenue is advertisers, the success of the service will largely depend on the effectiveness of the broadcast advertising.

The key indicator for campaigns aimed at increasing sales will be ROI. In other words, a campaign will be deemed successful if the revenue from conducting it sufficiently exceeds the expenses.

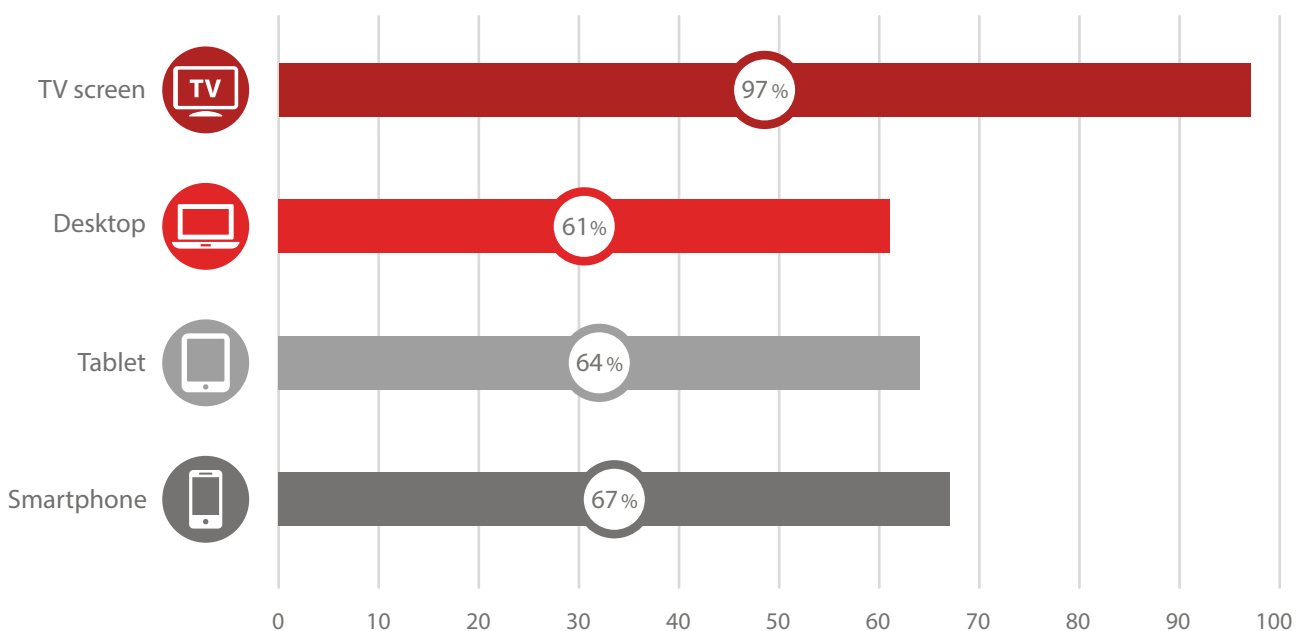
For reputational campaigns, different metrics will be important: audience coverage, its engagement, and building of brand awareness.

## VIEWABILITY

The best indicator of the effectiveness of video advertising is whether it has been played to the end. The television here is the undisputed leader, ahead of mobile devices by more than 30%.

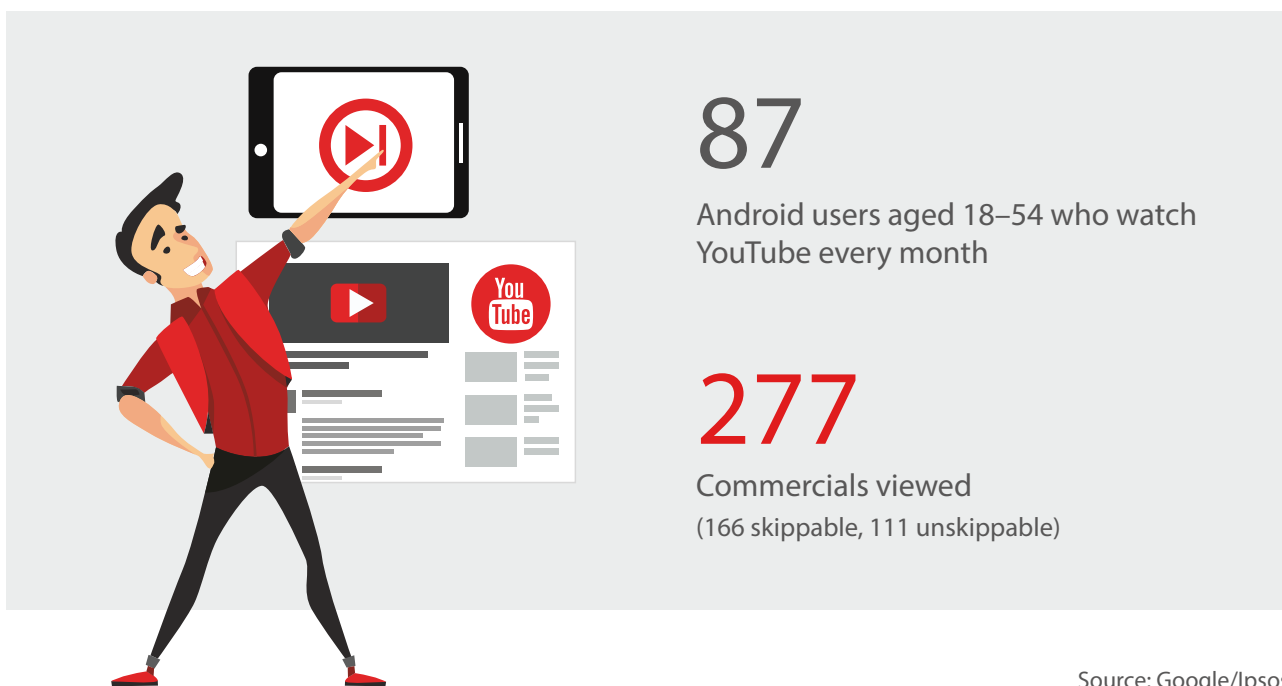
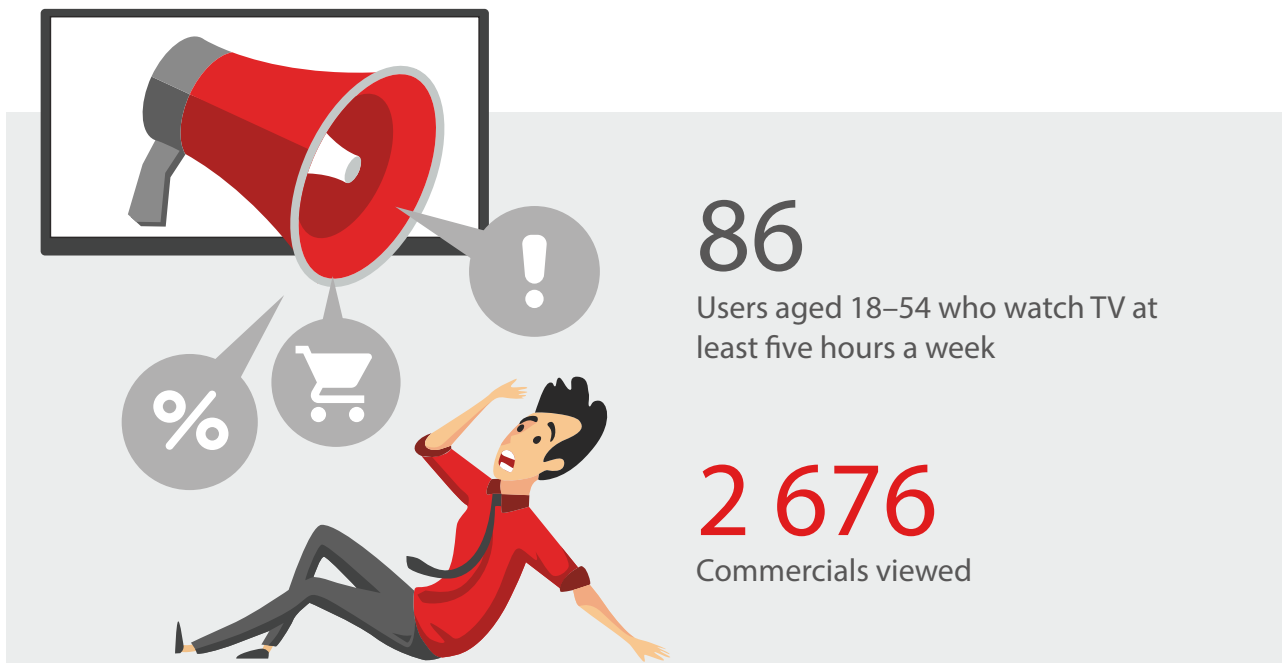
The difference in results is due to the possibility of disabling ads. Most commercials on the desktop can be skipped after five seconds of viewing. On mobile devices, unskippable advertising is much more common. And in the case of linear TV, you can only get rid of the annoying video by changing channel.

The viewability of ads depending on the type of device



Source: the Trade Desk

Fans of linear TV are forced to watch advertising much more often than users of AVOD services. According to a study by Google and Ipsos, people who spend more than five hours a week watching TV, see almost ten times more advertising than YouTube users.



Source: Google/Ipsos



## ENGAGEMENT

Viewing and seeing is not the same thing. Blindness to advertising is a 'diagnosis' increasingly observed among viewers. As advertising becomes more intrusive, we learn not to notice it. For example, take a long time to look at a promo video without perceiving it at the same time.

The indicators of engagement are significantly different from regular views: mobile device users remember commercials much better than viewers. We tend to perceive advertising on our gadgets as more customised because 'we hold it in our hands' while watching.

Google and Ipsos have conducted a large-scale study using the eye-tracking technique. They have studied the actions of users during commercial breaks for a long time.

### The audience was divided into two groups:



As part of the experiment, the first group watched TV for at least ninety minutes a day.



The second group watched YouTube videos on mobile devices for at least forty-five minutes a day.

### Both groups showed typical patterns of behaviour, which are conventionally divided into four groups:



#### ATTENTION

- Active viewing of advertising
- The look is directed to another screen section; advertising is viewable
- The look is fixed on the time counter or the Skip button



#### MULTITASKING PERFORMANCE

- Switching attention to the second screen
- Switching attention to people/objects



#### DISABLING:

- Channel changing
- Clicking on another video or link
- Iconising the video
- Exiting the application

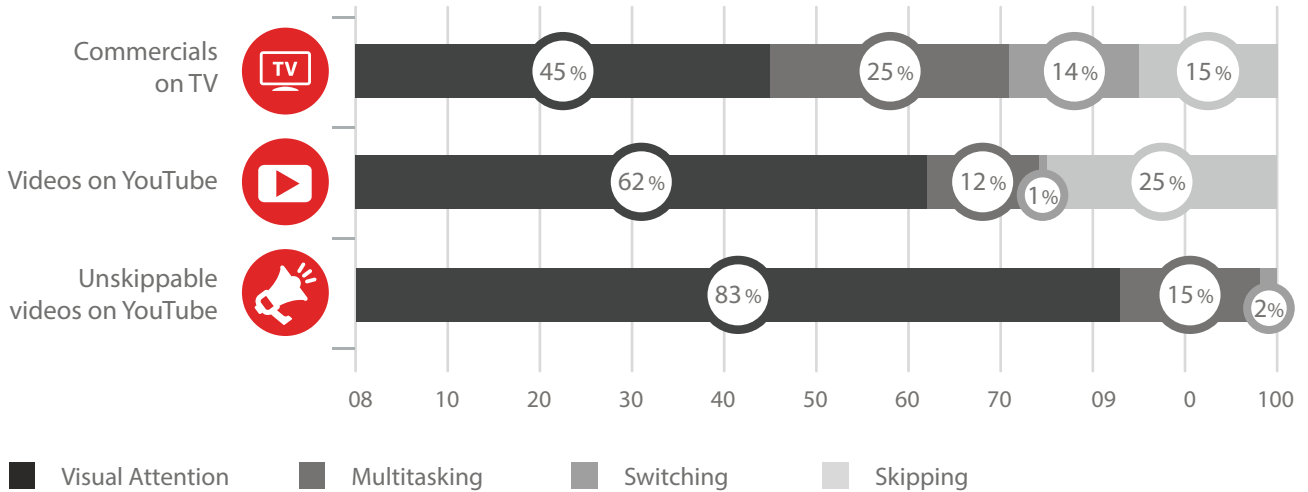


#### SKIPPING

- Fast rewinding
- licking on the 'Skip' button

The result of the study was the average duration of a particular type of behaviour in relation to the full time of the advertising broadcasting.

Viewer actions when viewing ads

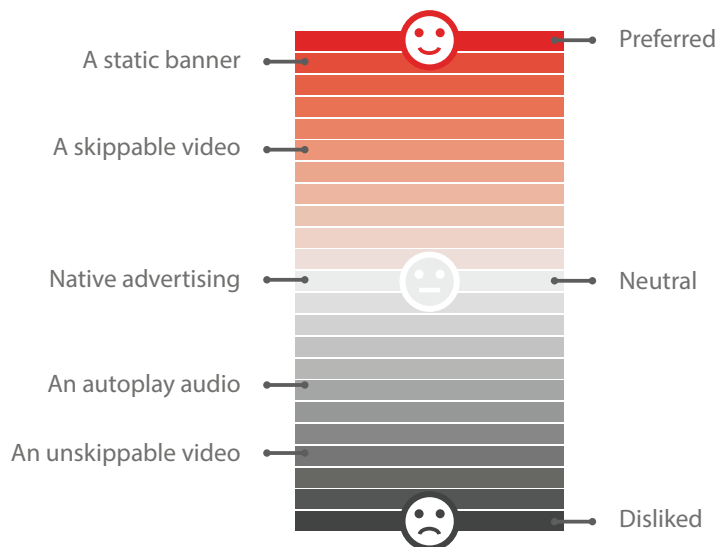


Source: Google/Ipsos

The researchers have also found that unskippable videos get the users' maximum attention. However, they should not be abused. The inability to disable uninteresting ads irritates users and often leads to channel changing or AdBlock installation.

Skippable videos, in turn, are positively perceived by users and do not cause negative emotions.

The attitude of users to advertising formats

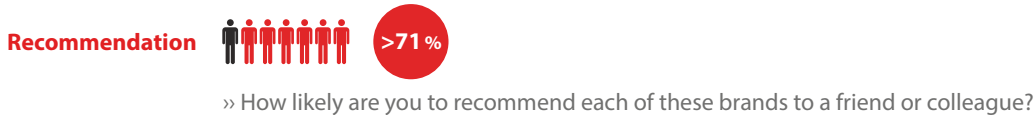
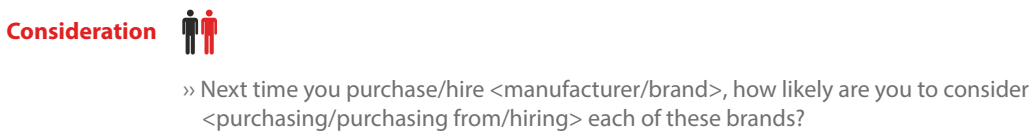
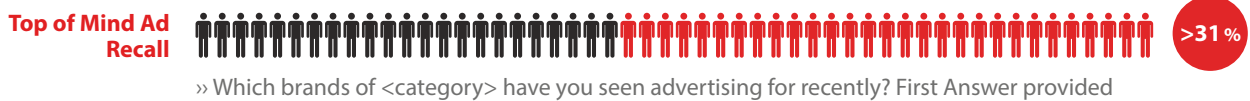
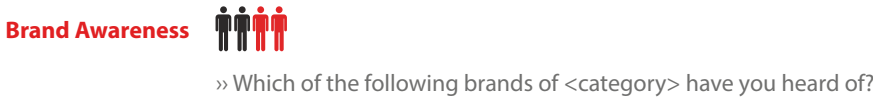


Source: PageFair

# AWARENESS

Regardless of the platform, video advertising is one of the best ways to communicate the brand idea to the target audience. However, studies have shown that broadcasting promos on several devices works more efficiently than using one channel.

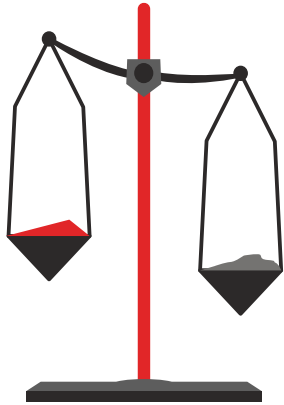
## Awareness increase



Source: Google/Ipsos

## WHAT SHOULD VIDEO ADVERTISING BE LIKE?

In a highly competitive environment, an important success factor will be not just the uniqueness of the content but also the kind of advertising you show and the way you do it. We have prepared some tips that will help you get the most out of each ad impression.



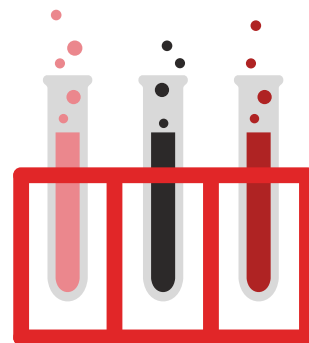
### Find the right balance between advertising and content

If you insert a 30-second promo video every five minutes of a TV show, your service will begin to rapidly lose subscribers. Users simply will not tolerate this amount of advertising. On the other hand, if you seldom broadcast ads, you risk, just as quickly, losing profits and advertisers.

The most successful strategy is to gradually increase the advertising weight, depending on the time during which a user is subscribed to your service. Loyal viewers will take two consecutive videos more calmly or will not notice the reduction in the gaps between them.

### Give the users the right to choose

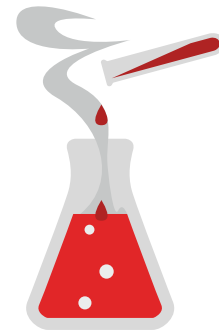
It's no secret that unskippable videos, pop-ups, and autoplay audio ads are very annoying to viewers. Even the most tempting commercial will elicit aversion if you show it unexpectedly to a user who can't disable it.



If you let the user know that ad viewing is a special method of payment for the use of the service, he will take commercial spots more easily, since he has consciously chosen this model.

### Advertising should be appropriate

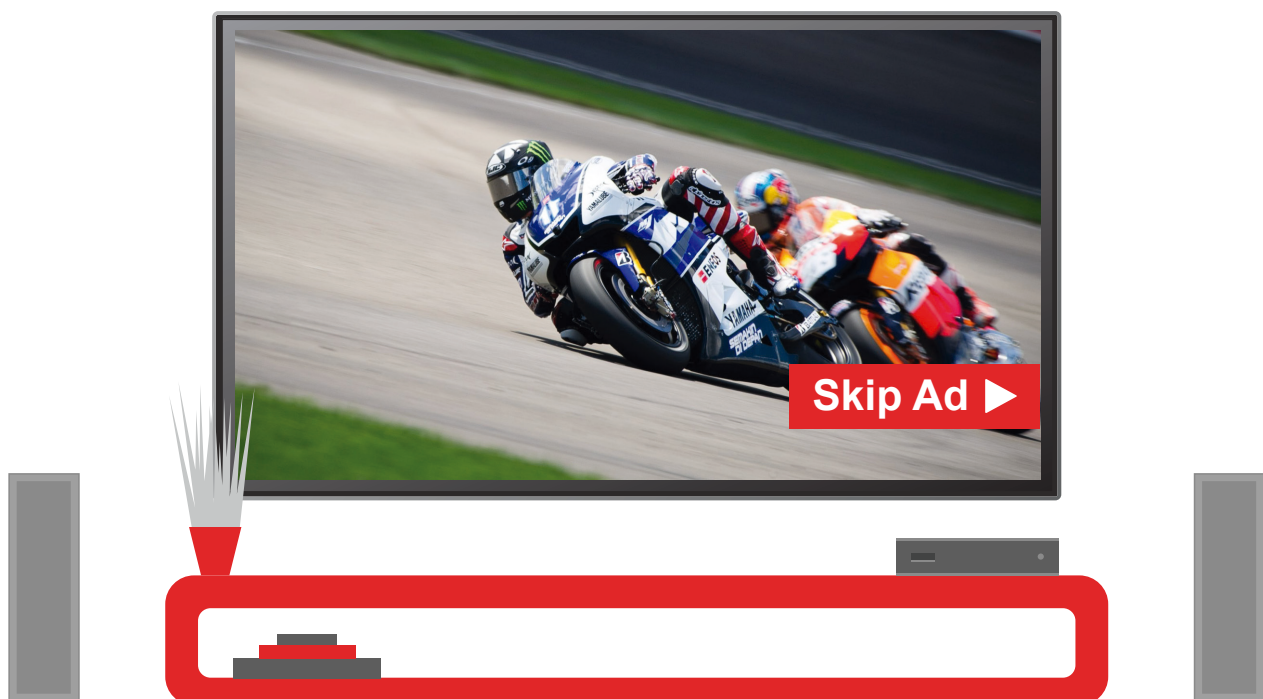
Not every man will appreciate a new lipstick from Oriflame, and iOS users would not download an application for Android. If advertising is not interesting, that's half your trouble. It's worse if the video is perceived as offensive by your audience — in this case, you won't avoid complaints.



Always keep in mind the demographics and interests of your users, encouraging them to prefer your service.

### Qualitative management system is the key to success

Convenient advertising management is important in any OTT project since it greatly facilitates the monetisation of your service. Infomir has settled this issue by the support of Adtelligent platform on MAG set-top boxes through Ministra TV platform.





**As a result of the organisation of the AVOD service on the basis of MAG and Adtelligent, we got:**

1. A ready-made advertising solution developed for CTV/OTT providers and app and device developers.
2. Multichannel and cross-platform support of both global vendors, such as Roku, Android TV, Apple TV, Amazon Fire TV and niche providers.
3. More than 250 applications integrated with the platform. For example, Pluto TV, Newsy, Wikia, and others.
4. More than 200 advertisers integrated with the Adtelligent platform.
5. The Adtelligent Intelli yield optimization algorithm, which by analyzing data in real time and comparing it with the historical data available on the platform, helps to choose the best solution for each impression.



'Powered by the Infomir's high quality OTT services, we are now able to offer the additional advantage of new audiences targeting to our demand side partners. The OTT advertising ecosystem is closely related to the online advertising industry and, considering its high potential, this market needs a strong cooperation between the service and technology parties to take it to the next level.'

Oleksandr Borniakov, President of Adtelligent.



# MAG500A

## Flagship Android TV™ device

with Google Assistant, Google Play Store and Chromecast built-in



4K and  
HEVC support



Quad-core ARM  
Cortex-A53 CPU



16 GB  
eMMC



2 GB  
RAM



Voice-controlled  
remote



Android™  
9.0



Dual-band Wi-Fi  
(2.4 and 5 GHz)

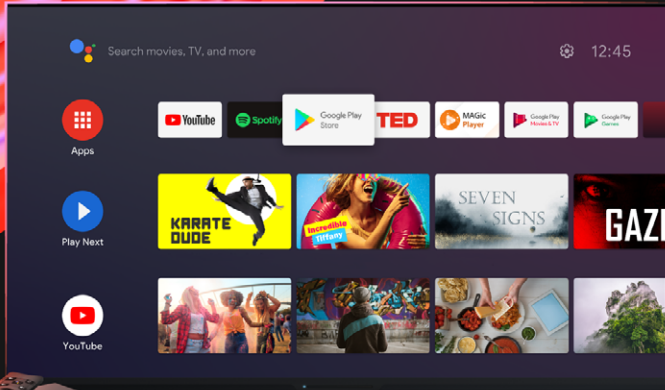


Qubic  
design

Meet a high-performance Android TV media player supporting 4K 60 fps playback, HDR, HEVC, and eight-channel Dolby Digital Plus™ sound.

The device features Integrated Widevine L1 and Microsoft PlayReady SL2000 DRM systems, Wi-Fi and Ethernet connectivity for accessing the internet, and 16 GB of internal storage for additional apps.

With MAG500A, even local providers can offer top of the line user experience complete with a catalog of over 7,000 apps and games, advanced voice control, and personalized recommendations.



## Android TV capabilities

Android TV offers a better user experience, integrated Google services, a modern launcher, voice-controlled remote, personalized recommendations, and an app store.



## Google Assistant

The voice assistant that controls playback, finds answers to your questions, fetches weather forecasts, looks up content across all apps, and finds channels, films, and TV shows on your users' favorite subscription services. All easily accessible with just a push of a button on the included voice-enabled Bluetooth remote.



## Widevine L1 and Microsoft PlayReady SL2000

Widevine L1 and Microsoft PlayReady SL2000 DRM systems enable operators to protect their content and have an easier time negotiating with copyright holders.

[Learn more](#)



# READY TO PROTECT YOUR BUSINESS

The inner-workings of customer support. Schemes, quality standards, and invaluable experience. An interview with Anatoly Filatkin, head of Tech Support Department at Infomir

Interviewed by Maria Kovalenko



It is impossible to imagine the development of business in the IT sector without customer support. Talking about how processes are structured, they can be built in a variety of ways at each company.

Like the sales department, the tech support service is an active channel of daily communication between customers and the company. In keeping with the theme of quality service, we have invited Anatoly Filatkin, Head of the Tech Support Department at Infomir, to share his long experience in organising such support.

**Properly organised tech support helps with a number of tasks: getting to know customers better; learning to speak their languages; understanding the problem to be resolved and how to do it.**



Anatoly Filatkin,  
Head of the Tech Support  
Department at Infomir

## Tell us how long Infomir has had tech support? How did it all begin?

- 2010** ● The Tech Support Department started its work in 2010; at that time, only a few engineers were working there.
- 2012** ● The call centre started receiving calls from users in 2012.
- 2015** ● And since 2015, we have worked with our customers through the Jira Help Desk system.

## How do you handle requests now?

To get a ticket into the system, our customers can contact us through:



The Help Desk portal;



The request form on our official website;

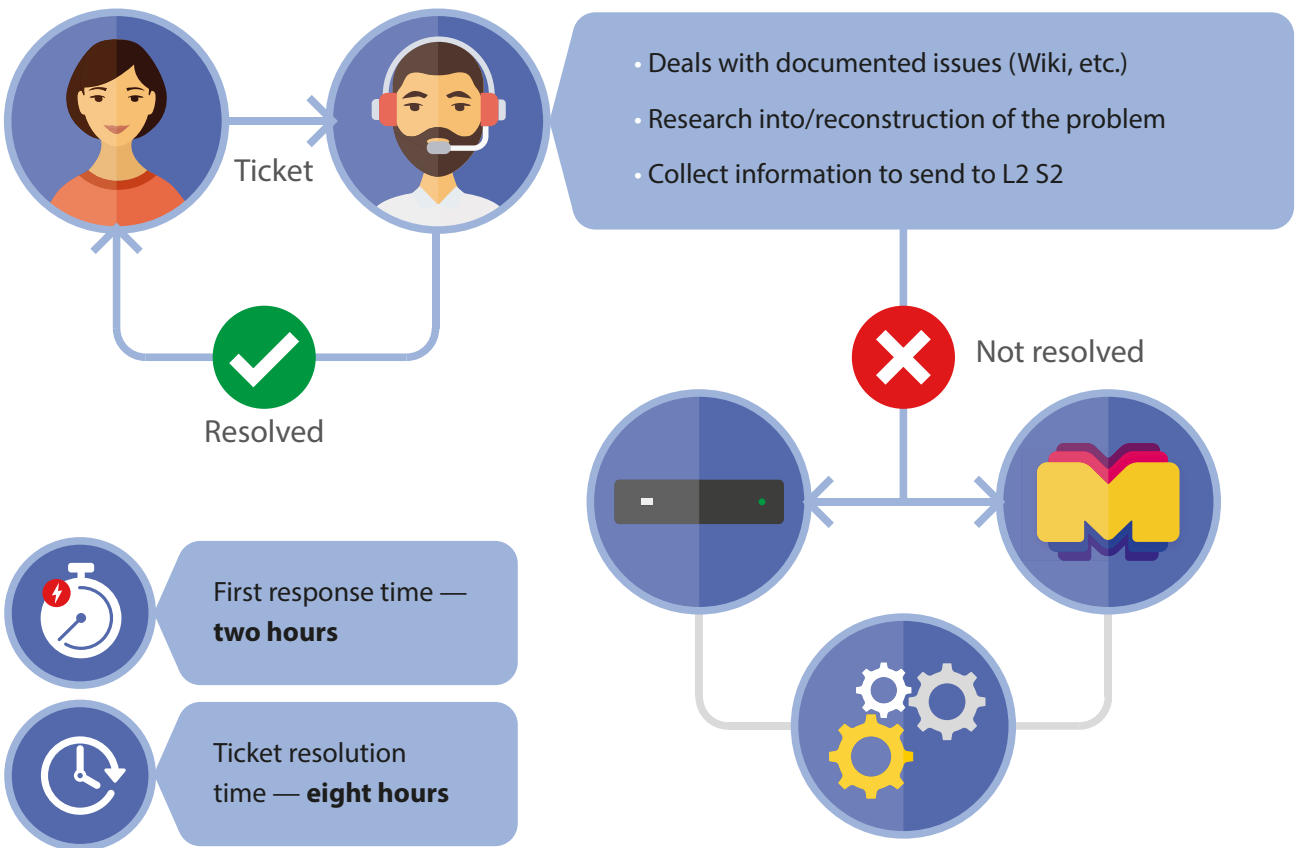


Email [support@infomir.eu](mailto:support@infomir.eu).

If we have already dealt with this type of issue, we will have documented it. Therefore, in most cases, we can provide users with recommendations referring to the documentation on Wiki.

However, with cases of greater complexity, we collect additional information and research or reconstruct the problem in the request. Tickets containing a confirmed bug or problems that need to be researched by the developers are sent to the laboratory for further investigation.

### How the Infomir Help Portal works



**Causes**

- Confirmed bug.
- Problem needs to be researched by developers.

- Support L1
- Support L2 (STB)
- Support S2 —  
Ministra TV Platform
- Laboratory  
(developers)

## What is the difference between Infomir's support and that of others, in your opinion?

The most important difference is that our products are supported throughout their service life.

Our main priority is to resolve our customers' problems. Requests are processed as quickly and qualitatively as possible. We consider every request carefully and make every effort to help our user. Even for a free basic tech support package, the average first response time is less than two hours, and the average ticket resolution time is less than eight hours.



The average customer satisfaction score based on their feedback is 4.2 on a five-point scale.



Consider the **MAG250** set-top box, a bestseller for Infomir for more than four years. Mass production began in 2012, but by 2016 the model was out of production, having given way to more modern solutions. However, we are still releasing and supporting software updates for it.

This is fundamentally important for operators because it is vital for them to provide seamless service to their viewers. For customers who need even faster and, most importantly, a guaranteed time to fix possible problems, we offer premium packages with the quality of service they demand.

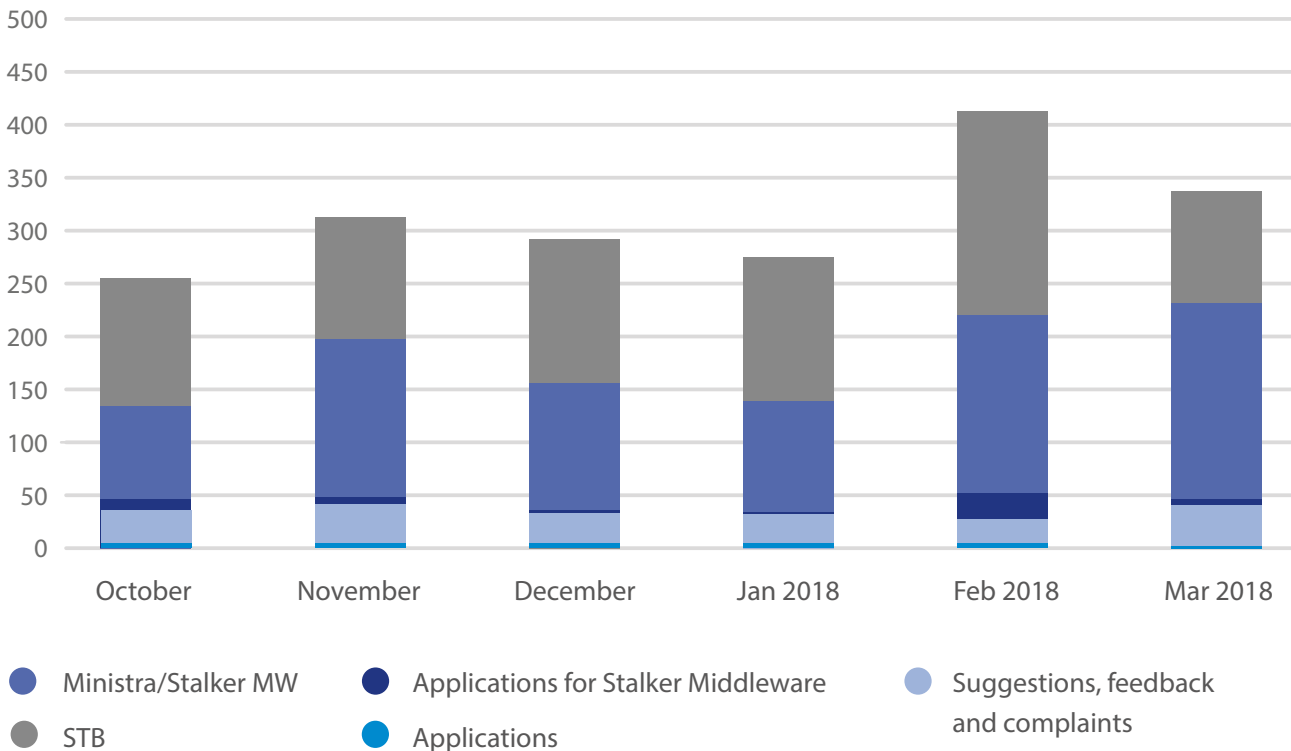
## What are the most frequent requests you get?

We see essentially the same situation here: customers are most interested in updates for set-top boxes and Ministra TV platform.

The most popular request subject areas are as follows:

- Ministra/Stalker MW Installation/Upgrade
- Ministra/Stalker MW Configuration and usage
- Ministra/Stalker Smart Launcher Apps
- MAG Firmware Upgrade
- STB launch or usage problems

### Ticket categories



## Tech support staff often have to be psychics and psychologists combined for customers. Do you have strict requirements for your employees?

Our credo is mutual support and constant training. This is the basis of well-organised teamwork.

**Our engineers are able to:**

- Identify the problem;
- Identify the conditions causing the problem;
- Find possible solutions without making changes to the system, and with minimal involvement of developers;
- ‘Translate’ the ticket into the language of the system developers;
- Make sure that the developers have correctly understood the problem described.

**To resolve the problem effectively, our employees must:**

- Have a good knowledge of the system terminology and its software and hardware;
- Have an idea of the customer’s business;
- ‘Speak’ the same language as the developers;
- Not hesitate to ask questions;
- Be able to explain;
- Get to the bottom of the problem.



The personal skills that will prove useful are thoughtfulness, quick-wittedness, patience, and being fast in response, so that you can bring as much benefit as possible to the customers you work with.

## What are you proud of and can boast of?

Over the past year, we implemented an analysis that allows us to assess the contribution of each engineer. Also, we monitor in real time the most frequent requests we get, which allows us to correct the work of production and R&D in a timely manner.

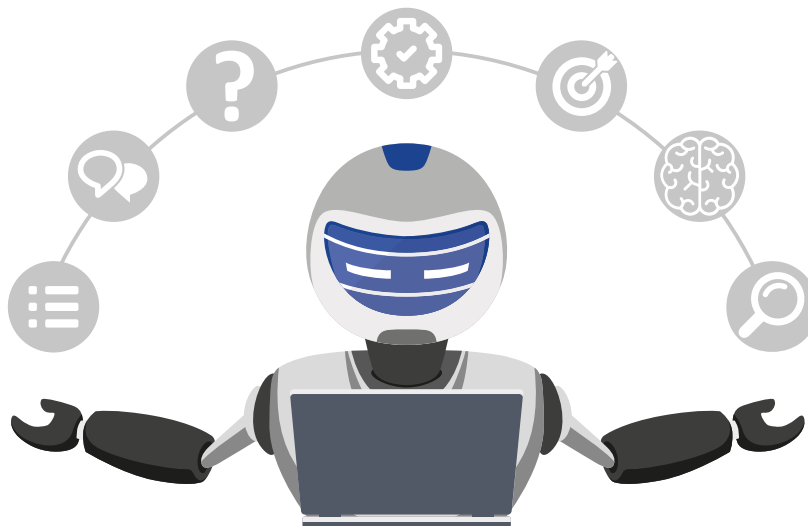
Nowadays we work in shifts, so we can always provide timely responses to requests from users in other time zones. The next stage is the introduction of a day-and-night service.

## The new trend is to use artificial intelligence and chatbots. What do you think about this?

We want to automate the processing of the simplest and most frequent requests from end users. Therefore, in the near future, we plan to introduce a virtual assistant. Of course, for the operators, we will preserve customer support with a qualified engineer, as nothing is able, so far, to replace live communication.

Currently, we are developing a bot for monitoring and optimising internal business processes.

No matter how good your product is, live customer support is vital for retaining your customers and attracting new ones via a marketing buzz.



“The human approach to resolving customer problems is more useful than the most modern automation systems. Therefore, although the demand for technical skills is growing, the ability to communicate with customers will always come first.”

So, in conclusion, tell us what inspired you for so many years? What encourages you to develop and work harder?

Our customers, of course. It is very interesting and informative to watch businesses being built from scratch, in remote corners of the planet, on the basis of our solutions.

Thus, our customer support, the products and solutions of Infomir made it possible to deploy from scratch one of the first IPTV projects on the island of Martinique in the Lesser Antilles in the Caribbean. The project was born and developed before our eyes. We did our best to make it successful.





# IMPLEMENT AND CONQUER

Three tried-and-tested software development practices that will improve your business

Author: Irina Tishchenko, Product marketing manager Ministra TV platform



The task of an entrepreneur is to create value for which customers are willing to pay money. Otherwise, doing business is transformed into Russian roulette and reading teacups.

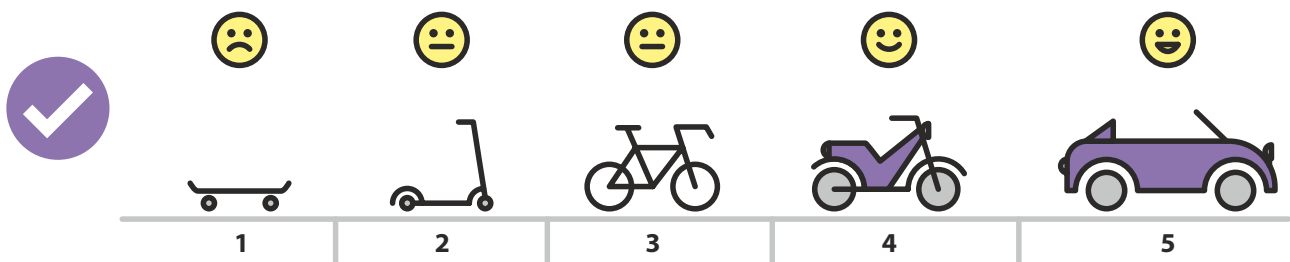
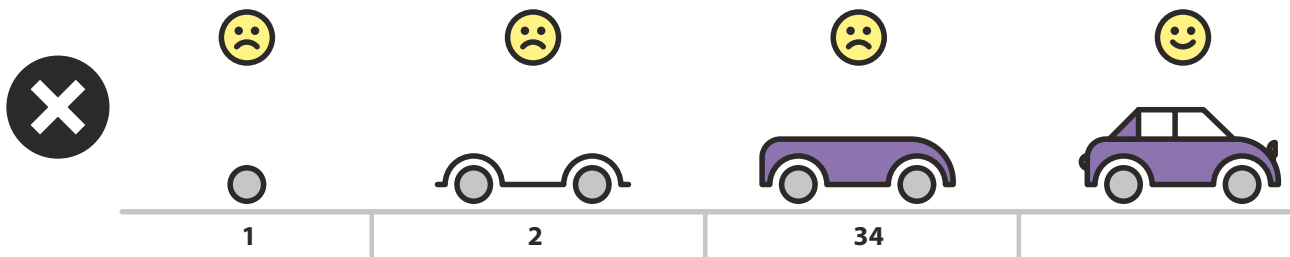
The knowledge of the best techniques and experience of those who have already successfully introduced their own products to the market will help to avoid this. We share the tools that helped to develop the Ministra TV platform and will be helpful when launching your project or service.

## 1. NOT ALL AT THE SAME TIME: START WITH MVP

A huge expenditure of time and money. A mysterious model of monetisation. Payback in a dream, not in reality. This is what we get if we work within 'doing, then considering' and ignore such a thing as an MVP. This abbreviation saves us from stillborn ideas.

**An MVP** — mistakenly deciphered as a minimum valuable product or a minimal valuable product — is a minimum viable product.

An MVP allows you to get real feedback from your customers and avoid creating things people are not willing to pay for. The key reason for the failure of brilliant ideas is the poor knowledge of one's own customers. Instead of studying needs in the early stages, the idea generators, having developed the MVP, go head over to work on a risky venture, without testing it on real users.



The method is based on the development—measurement—feedback-study cycle. Obtaining feedback is followed by the development of successful solutions and re-testing.

**IMPORTANT:** we test only one idea/one value.

Give up the inessential. You have given it up? Now give up the inessential once again. Do not be afraid to cut it out.

For example, you decided to start a new price plan or service.

### How to check the idea?



Create 1–2 new pages on the website or start a landing page with a new offer.



Add an 'Order' or 'Get a consultation' button.



Define the test advertising budget and the deadlines for measuring the results.



Launch an advertising campaign on these pages.



Analyse the statistics of the button clicks.



Draw conclusions.



Make improvements efficiently.

The best confirmation of the customers' interest is the purchase of your service.



### As a result you:

- ✓ Do not spend money on a failed project.
- ✓ Check the real interest in your idea.
- ✓ Choose a direction for the development.
- ✓ Get a database of potential customers and early adopters.

## 2. JOBS-TO-BE-DONE: THE KIND OF JOB YOUR SERVICE IS 'HIRED' FOR

People are willing to use TVs. But the era of Smart TV has arrived, and a simple TV is a thing that no one wants to buy now. Steve Jobs removed the buttons from a phone and created a product of the future. Do you also dream of revolutionising the industry? Alas, you cannot create innovations based solely on information about your current customers. Consider the Jobs-To-Be-Done concept.



'Most companies divide their target audience into segments according to user or product characteristics. But users have a different view of the market. They just have a task to perform, a job to be done, and they are looking for the best product to help in this.'

Clayton Christensen, Professor at the Harvard Business School

Your business solves the customer-related problem — does the job.

Customers make a purchase, 'hire' your product to make their lives easier and more joyful. The one who is the first to come up with a new, quick, convenient, and even more joyful way to 'do the job' becomes the winner. That's all the magic. Machines replaced horses.

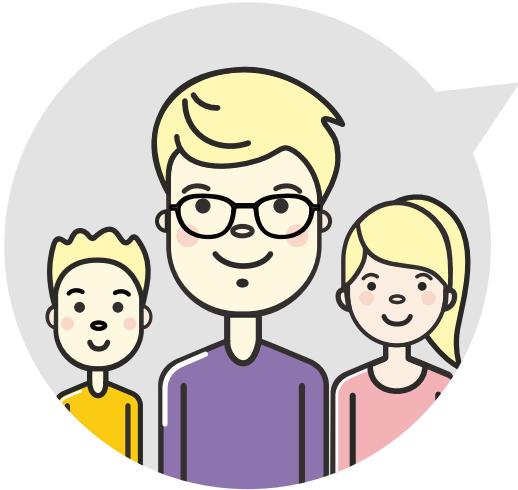
The data do not speak about the reasons, but they are what one has to focus on, taking into account the context of the situation. That's what the job-to-be-done is.



Clayton Christensen is a Professor of Business Administration at the Harvard Business School, an entrepreneur, and a business consultant. He is one of the world's leading experts on innovation and growth; he worked for the White House. He believes that the growing amount of data on users does not help companies, but leads them in the wrong direction.

# J O B D O N E





You have a customer by the name of John Smith. He was born in 1968, lives in a dormitory district, has two children, and goes on holiday three times a year. John bought a subscription to a package of sports programmes from you. What is the relationship between his data and the fact of buying the subscription? Nothing.

He just wants to watch football with his friends — that's his job to be done. The context of the situation matters. For example, if John bought a package of children's channels, his job was taking care of children.

The concept allows a new look at competitors:

- 1) Direct: they do the same job in the same way.
- 2) Secondary: they do the same job in different ways.
- 3) Indirect: they do different jobs with a conflicting result.

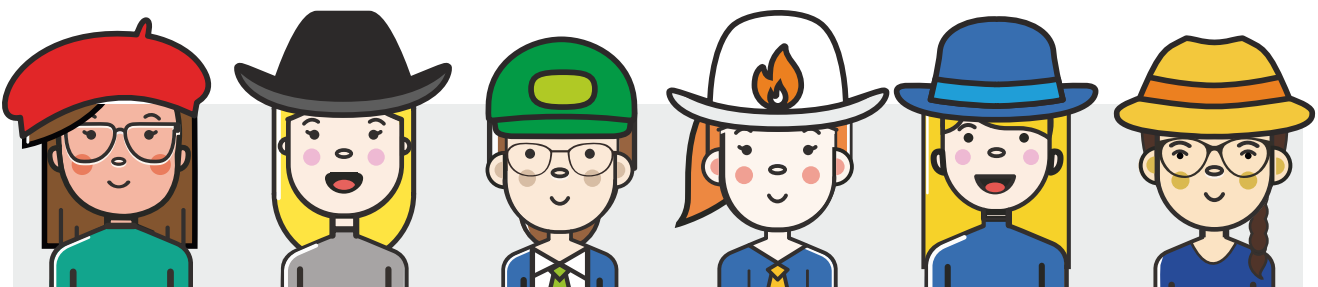


Try to shift the focus from the excellent characteristics of your product to the users' objectives that the product meets.

#### As a result:

- ✓ You will look in a new way at your competitors.
- ✓ You will understand your customers better.
- ✓ You will improve your market position.

### 3. THE METHOD OF SIX THINKING HATS: BRAINSTORMING IN A NEW WAY



Our thinking is chaotic. It is a set of emotions, intuition, facts, and common sense. And when we need to make a decision or come up with an idea, we begin to search for a recipe: what we should choose to apply from the list above. If you have long needed a 'stretch for your mind' and a breath of fresh air, the Six Thinking Hats method will solve these problems.



'Without non-standard thinking and new concepts, it is impossible to move forward.'

Edward de Bono

The Six Thinking Hats method of Edward de Bono is a tried-and-tested thinking technique. It allows working individually or in a group, focusing attention consistently on one of six directions. A white hat is responsible for facts, a green one — for creativity, a yellow — for benefits. A black hat means negative consequences, a red one — feelings and emotions, and a blue hat is responsible for the process.

**Those who have applied it in their work are British Airways, IBM, PepsiCo, DuPont.**



Edward de Bono is a British psychologist, a consultant in creative thinking, and a writer. As a student, he studied medicine, physiology, and psychology. This explains his broadside approach to the problems of interest and his desire to understand the subject at the confluence of disciplines. This, in fact, gave rise to the theory of Six Thinking Hats, one of the most popular versions of the brainstorming method.

	→	<b>control</b>
	→	<b>information and facts</b>
	→	<b>emotions and feelings</b>
	→	<b>critical judgment</b>
	→	<b>optimism</b>
	→	<b>creativity</b>

If brainstorming is conducted collectively, a moderator is mandatory.

He monitors the process, records the answers, overcomes chaos, and sums up the results.

For clarity of the process, you can use mind maps.



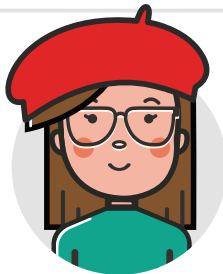


**The blue hat. The leader.**

- Manages the whole process.
- Determines at the beginning of the work what needs to be done.
- Coordinates the work, collects results, organises, and regulates.
- At the end of the work, records the results and determines the tasks for the future.

**The green hat. The creative.**

- What are the alternatives?
- What new ideas are related to this?
- How has it not been implemented yet?
- What are the crazy ways to use it?
- Destroys stereotypes, purposefully seeks new ideas.
- Emphasis on unconventional and provocative decisions.

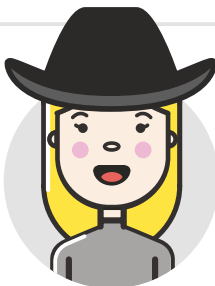


**The red hat. The artist.**

- What is our experience of this?
- What are our guesses about this?
- What does our intuition tell us?
- What are our feelings and vague assumptions?
- Emphasis on intuition and feelings. No justification for our emotions.

**The white hat. The scholar.**

- What do we know about this?
- What information, figures, research, data, statistics are available?
- What information do we lack?
- An impartial and objective position. Singles out the rational kernel.
- Emphasis on the presentation of facts. No emotions.



**The black hat. The critic.**

- What can go wrong?
- Why shouldn't this be done?
- All our fears.
- Every pitfall.
- Emphasis on critical perception.

**The yellow hat. The optimist.**

- What are the positive aspects of this?
- What are the advantages and pluses?
- What are the bright prospects?
- Why should this be done?
- Emphasis on the pluses.



It is not necessary to literally put a hat on; you can use a board with stickers. The main thing is to follow the logic of discussion: we discuss as one hat. You can also adapt the technique to your team and determine its best possible implementation.

**IMPORTANT:** no one should speak as different hats at the same time. This helps to separate ideas and not to mix them.

#### As a result:

- ✓ You get a fuller picture of the situation that needs to be addressed.
- ✓ 'Empty talk' is excluded.
- ✓ Communication in the team improves.

And remember the key phrase that should become a mantra: 'You are not your product.' The problem of most businesses is their inability to work with feedback. Most entrepreneurs are too passionate about their business and do not always understand what customers come to them for.



Distinguish real problems from invented ones.



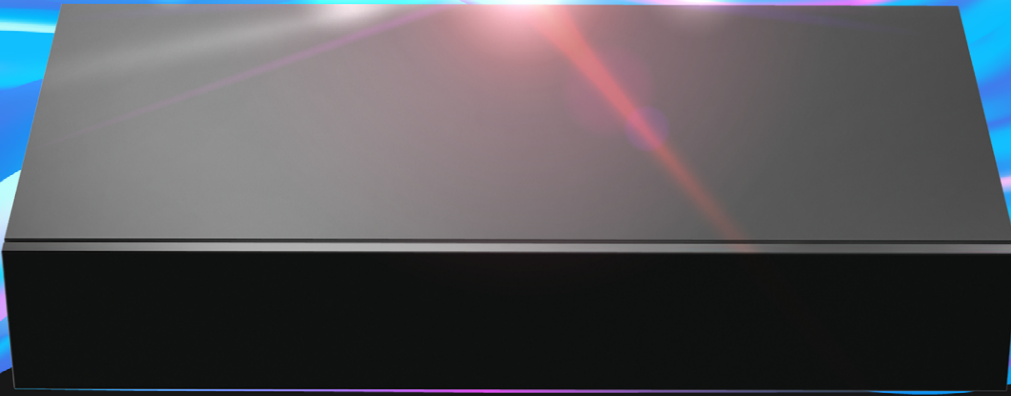
Do not think for your customers, ask them.



Don't be afraid to experiment.

**In the development of the Ministra TV platform, we often use the newest methods and are always happy to share our experiences. We hope that you will take a fresh look at some of your existing issues and expand the horizons of your business.**





# MAG520 MAG520<sup>W3</sup>

## 4K and HEVC-enabled Linux set-top boxes

Fast integration with your middleware



4K and  
HEVC support



Quad-core ARM  
Cortex-A53 CPU



4 GB  
eMMC



1 GB  
RAM



User-friendly  
IR remote



Linux  
4.9



Dual-band Wi-Fi  
2.4 and 5 GHz  
(MAG520w3 only)



Qubic  
design

MAG520 and MAG520w3 are high-performance Linux set-top boxes that feature an Amlogic S905X2 chipset, a 25% more powerful ARM Cortex-A53 CPU, and a better GPU. It enables smooth 4K 60fps content playback.

With MAG520, operators can guarantee uninterrupted service. Infomir's API ensures easy integration of the device into any project already using MAG set-top boxes. The integration of MAG520 and MAG520w3 with third-party middlewares and DRM/CAS is available upon request.



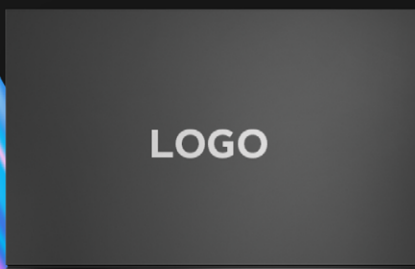
## The best user experience on Linux 4.9

MAG520 is a reliable high-performance device designed to run for months on end without rebooting. Operators can easily customize its UI and develop apps for it.



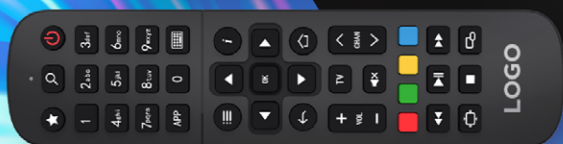
## Application and integration API

Infomir has created an API to facilitate integration with CAS/DRM and app development. The apps for the Linux-based MAG Linux set-top boxes are developed using HTML, CSS, and JavaScript. Infomir provides extensive documentation for developers' convenience.



## White-label UI, body, packaging, and remote control

We can customize the interface and software, and apply your branding to the set-top box body, remote control, and packaging. Companies can get UI with their logo and brand colors or even create a unique one.



[Learn more](#)

# WHAT AWAITS OPTICAL NETWORKS

Twenty interesting facts about the evolution of broadband access networks

Author: Anastasia Tsugulskaya



**The transfer of information through signal lamps has been replaced by high-speed Internet access. How did humanity manage to accomplish such a revolution in just 300 years? We will go back in time to understand what is awaiting fibre optic networks in the near future.**

Just imagine that almost every video call, every message in a messenger, every YouTube video turns at some point into elementary particles of light and rushes at a speed greater than 200 thousand km/s along the ocean floor through ultra-thin glass filaments. And the filaments, which are more than two billion kilometres in length, can wrap around the globe 50,000 times.

And the starting point of all this was...

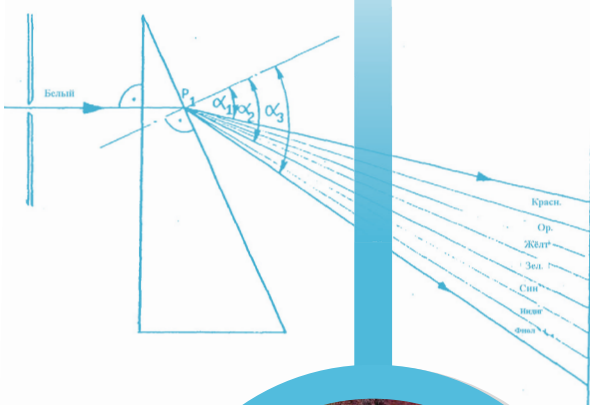
1700

### The main optical discovery

Isaac Newton laid the foundations of modern physical optics: he proved the possibility of breaking light down into a spectrum of different colours.

The scientist told the world that white sunlight consisted of simple rays. The rays have different degrees of refraction and are coloured in different ways. Collectively, the rays form the solar spectrum.

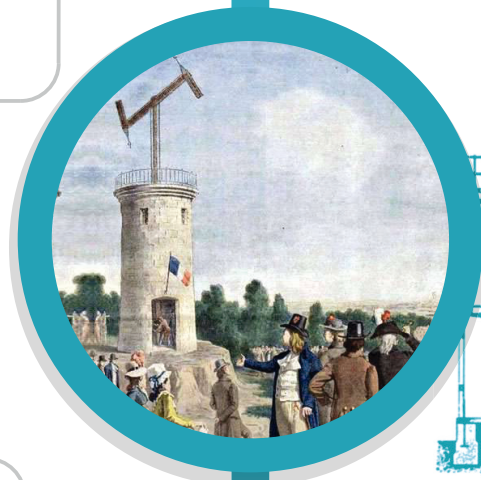
Society learned for the first time that the solar spectrum was a set of intermediate shades, yet all merging into the seven main colours of the rainbow: violet, indigo, blue, green, yellow, orange and red.



1790

### The first optical telegraph created

The French engineer Claude Chapp used semaphores to create the first optical telegraph system. The system transmitted information from one elevation to another by means of signal lamps.



## 1 September 1794

### The first 'telegram' was sent

The world's first telegraphic message came to Paris from Lille via Chapp's new optical telegraph. It reported on the victory of the French Republic's army over the Austrians. The dispatch covered 210 km in 3 hours. The main drawback of the optical telegraph was its dependence on the weather, as it worked only on clear days.



#### AN INTERESTING FACT:

in the excerpt from Alexandre Dumas's novel *The Count of Monte Cristo*, the author displayed the true delight of his contemporaries in Chapp's creation, calling the telegraph 'the all-powerful lord'.



## 19 February 1880

### The first transmission of sound at a distance

The inventor Alexander Bell's photophone transmitted sounds at a distance with the help of light. Thanks to this invention, Bell was the first to transmit a wireless phone message. Bell's photophone became the prototype of modern fibre optic communication lines, through which most of the world's telecommunication traffic is now transmitted.



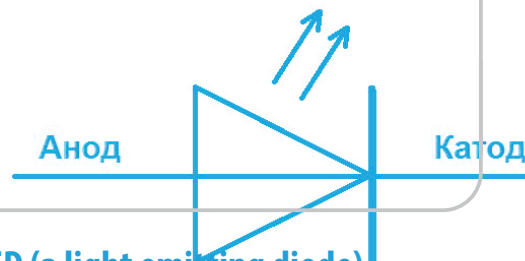
#### AN INTERESTING FACT:

on 10 March 1876, Bell first conveyed human speech over a distance with the help of the first phone. The inventor said something like: 'Mr. Watson, come here. I need you.'





1923



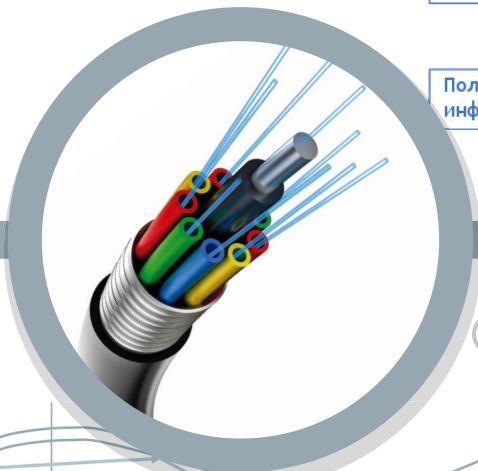
**Creating a LED (a light emitting diode)**

The physicist Losev developed a light emitting diode, LED, which was eventually to be used for transferring data at megabit speeds.

1948

**Information theory**

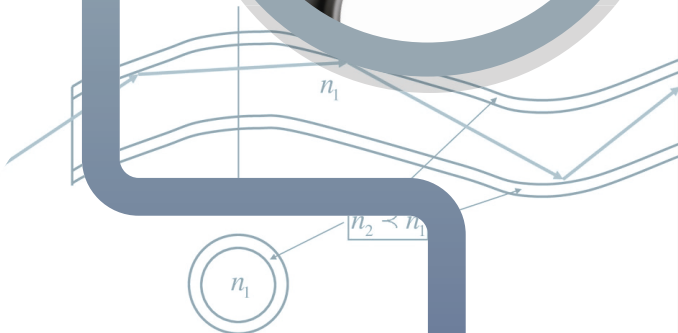
Claude Shannon put forward the idea that communications, to be reliable, should be digital. That is, the communication task should be considered as the transmission of binary digits — the bits. There appeared the opportunity to explicitly compare the transmitted and received information.



1960

**The term 'fibre optics' appeared**

Dr. N. S. Kapany used the term 'fibre optics' for the first time in an article in Scientific American. He also owns the honour of being the inventor of the bent glass rod.

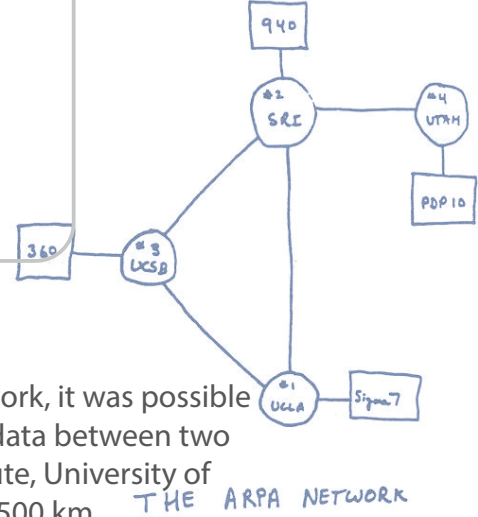




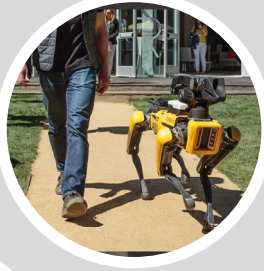
1969

### The Internet prototype

Thanks to the ARPANET network, it was possible for the first time to transmit data between two computers at Stanford Institute, University of California, over a distance of 500 km.



THE ARPA NETWORK  
DEC 1969



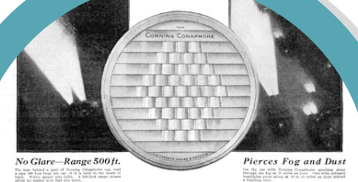
### AN INTERESTING FACT:

the ARPANET network was created by the US Defence Advanced Research Projects Agency — DARPA. Nowadays, they are best known for their robotics experiments with Boston Dynamics.

1970

### A new technique for the production of glass fibres

The Corning Glass Works Company, famous for having produced glass for Edison bulbs, introduced an optical fibre with a low signal loss level: at first, up to 17 dB/km, and then only 4 dB/km. Such low losses made optical fibre irreplaceable for the sphere of communications and networks.



### CORNING CONAPHORE Sets new headlighting standard

MOTORISTS have long felt the need for a superior headlight. They want a headlight with long range and strong side light, but glare-free.

Corning and others have emphasized the need for each a headlight by glass lens. The new Conaphore lens is a "multi-layer" lens that offers the best of a scientific lens in every way.

**Light Dispersion**  
The new Conaphore lens is a multi-layer lens that offers the best of a scientific lens in every way.

**Five Major Advantages**  
1. Eliminates glare and side light when a car is in the rear view mirror.  
2. Eliminates glare and side light when a car is in the rear view mirror.  
3. Eliminates glare and side light when a car is in the rear view mirror.  
4. Eliminates glare and side light when a car is in the rear view mirror.  
5. Eliminates glare and side light when a car is in the rear view mirror.

1973

### Emergence of the Internet's international structure

Under the Atlantic Ocean, a cable was laid and the first foreign organisations, from Great Britain and Norway, connected to the Internet. The network was then used to send emails, news, and announcements.



1976

**First use on TV**

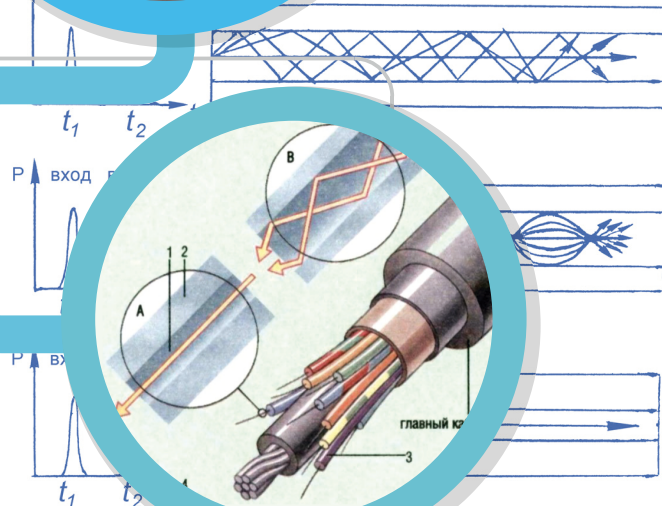
The Rediffusion Company used a fibre optic system to transmit analogue television signals.



1977

**Fibre optics in telephony**

The AT&T and GTE Companies installed commercial fibre optic telephone systems, which outperformed, through this characteristic, the performance standards at that time. This led to the active spread of optics in the late 1970s and early 1980s.



1984

**The NSFNET inter-university network**

The National Science Foundation of the United States established the NSFNET network, which consisted of several smaller networks, and had a large bandwidth. In one year, 10,000 computers connected to it.

**A multimode cable**

50/125 cables were a whole generation of fibre optic systems for commercial use. They guaranteed an acceptable range of data transmission. The fibre provided sufficient signal power for 10 Mbit/s at 2-kilometre distances.

1980

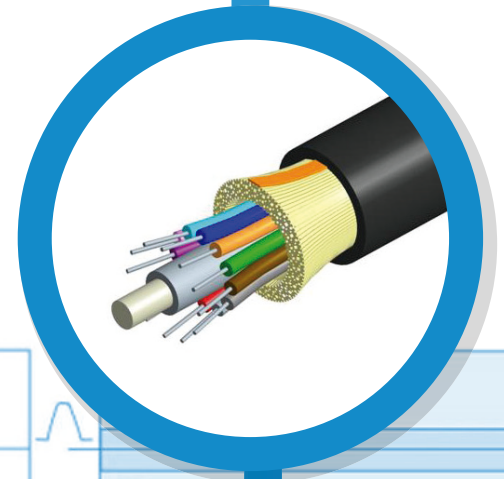




1985

### Introduction of single-mode optical systems

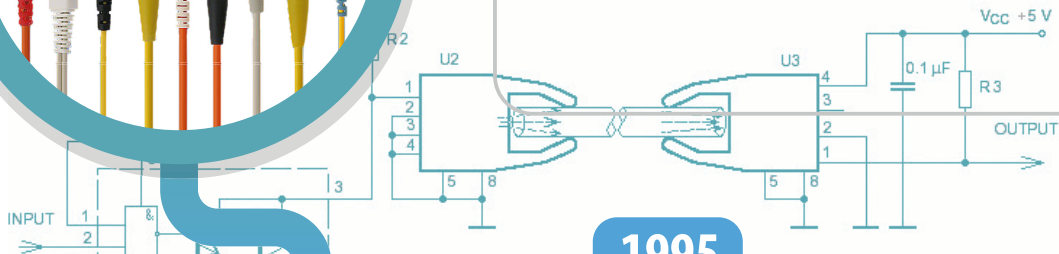
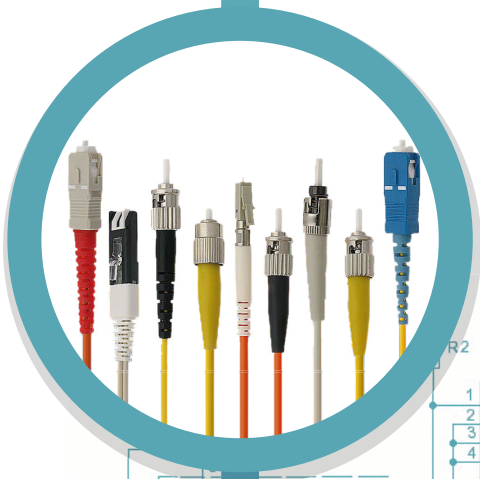
The AT&T and MCI Companies not only implemented single-mode optical systems but also adopted them as the standard for future projects.



1990

### The first use of optical fibres in standard production equipment

The IBM Company announced the release of a new high-speed computer. It used a communication channel controller with disk and tape external drives based on fibre optics. The introduction of the ESCOM fibre controller allowed transfer of information at a higher speed and over longer distances.



1995

### The World Wide Web Consortium formation

The World Wide Web now becomes the main information provider on the Internet, its traffic having overtaken the FTP (file transfer protocol). It forever changed the Internet and created the basis for its modern outlook.



**1997****Ten million computers**

There are already ten million computers connected to the Internet. By this time, over one million domain names have been registered. The Internet has become a very popular medium for information exchange.

**AN INTERESTING FACT:**

In 2006, the Infomir Company started mass production of broadband solutions. Also, Infomir launches the development and production of the first MAG set-top boxes.

**September 2017****48% of the world's population has access to the Internet**

The UN reported that almost half the world's inhabitants use the Internet. At this time, the number of Internet users had increased since 2010 by 1.5 billion people.

**So what's next?**

Until recently, the potential of standard optical fibres has been enough to solve the problem of increasing global traffic. However, times change, and laboratory experiments on data transfer are getting closer to the fundamental limits of the optical network bandwidth.

That fact was called the optical networks' 'capacity crisis'. Today, the concepts of the optical networks' capacity crisis and the Shannon limit are used as justification for the urgent need for innovative solutions.

Reasoning about the crisis in optical networks cannot be called groundless. Transmission speed limitations, distortions and signal interference indicate the need to search for new solutions. It is quite possible that, in 15–20 years, subscribers will pay operators for the actual bandwidth used. And in 100 years, networks will be created with bandwidths which will meet the needs of users.

## MEET INFOMIR IN PERSON!

The Infomir team appreciates live communication. We are always eager to share our experience and make new acquaintances. You can learn more about our new products and test them at professional exhibitions and forums around the world.

Make an appointment to meet Infomir at key industry events.



### **NabShow Las Vegas**

9-12 April 2018

Las Vegas, USA, Convention Center  
SU9602CM



### **ANGACom**

12-14 June 2018

Cologne, Germany, Congress-Centrum Koelmesse  
Hall 8, Booth no. O42



### **IBC**

14-18 September 2018

Amsterdam, Netherlands, RAI Amsterdam  
Hall 14, Stand 22



### **NABShow New York**

18-19 October 2018

New York, USA, Javits Convention Center

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## EDITORIAL

BROADVISION magazine is a quarterly online periodical from Infomir's marketing specialists devoted to the IPTV/OTT industry and modern technology. We are happy to present our first this year issue.

We hope you like reading our magazine just as much as we like working on it.

Sign up for our newsletter and share the issue on social networking sites. This is the best way to show us that we are doing the right thing. Tell us what you would like to see on the pages of BROADVISION next year. E-mail us your suggestions and ideas at [broadvision@infomir.com](mailto:broadvision@infomir.com).

Let's grow together!

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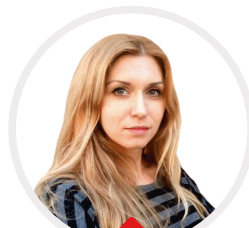
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